

IMPROVED METHOD FOR TMAH ETCHING OF CMOS INTEGRATED CIRCUITS

Abstract: A method for preparing and using a tetramethylammonium hydroxide etchant (180). The etchant is prepared by combining precisely known quantities of the etchant components obtained from liquid sources of tetramethylammonium hydroxide (110) and dissolved silicate (115). A precise quantity of an acidic (relative to tetramethylammonium hydroxide) oxidizer is added at intervals during a long etch as well as just before immersing a sample holder (135) and sample in the etchant (180). A precise quantity of tetramethylammonium hydroxide such as can be obtained from a pipette (175) is also added during long etches to compensate for the reduction in etchant pH caused by the addition of the oxidizer.